

$$6) P(2) = -2^3 + 5 \cdot 2^2 - 2 + 7 = -8 + 20 - 2 + 7 = 17 \text{ NO}$$

$$P(-5) = -(-5)^3 + 5(-5)^2 - (-5) + 7 = 125 + 125 + 5 + 7 = 262 \text{ NO}$$

$$P(x) = x^2 - 6x - 7$$

$$7) P(-1) = 0 \quad a - b + c = 0$$

$$1.5 \quad P(-2) = 9 \quad 4a - 2b + c = 9$$

$$P(7) = 0 \quad 49a + 7b + c = 0$$

$$3a - b = 9$$

$$48a + 8b = 0$$

$$1 + b + c = 0$$

$$24a - 8b = 22$$

$$48a + 8b = 0$$

$$c = -7$$

$$b = 3 - 9 = -6$$

$$\boxed{a=1}$$
  

$$\boxed{b=-6}$$

$$1.5 \quad 8) \quad a) \quad \frac{2x+3}{(x+2)(x-2)} - \frac{4-x}{(x-1)(x-4)} + \frac{5}{4x(x-4)} =$$

$$\frac{4x(2x+3)(x-1)(x-4) - (4-x)4x(x+2)(x-2) + 5(x+2)(x-2)(x-1)}{4x(x+2)(x-2)(x-1)(x-4)} =$$

$$(8x^2 + 12x)(x^2 - 5x + 4) - (16x - 4x^2)(x^2 - 4) + (5x + 10)(x^2 - 3x + 2) =$$

$$8x^4 - 40x^3 + 32x^2 + 12x^3 - 60x^2 + 48x - 16x^3 + 64x + 4x^4 - 16x^2$$

$$+ 5x^3 - 15x^2 + 10x + 10x^2 - 30x + 20 =$$

$$12x^4 - 39x^3 - 49x^2 + 92x + 20$$

$$4x(x+2)(x-2)(x-1)(x-4)$$

$$b) \quad \frac{2(x+3)}{3(x-1)} \cdot \frac{(x+3)(x-3)}{5(x+3)} = \frac{(1-x)(1+x)}{(x+1)(x+3)} = \frac{2(x+3)(x+3)(x-3)(x+1)(x+3)}{3(x-1) \cdot 5(x+3)(1-x)(1+x)} =$$

$$= \frac{2(x+3)^2(x-3)}{15(x-1)(1-x)}$$